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Comments
on
Department of Energy
Idaho National Engineering and Environmental Laboratory
Idaho Chemical Processing Plant
Proposed Cleanup Plan

Submitted on Behalf of the
Environmental Defense Institute
by
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The US Department of Energy (DOE) Idaho Chemical Processing Plant (ICPP) proposed plan is an improvement over the 6/98 draft version. Providing drafts of proposed plans is a constructive process that extends the comment period beyond the traditional "decide, announce, defend" mode formerly used by DOE. One of the significant changes is the shifting of the ICPP high-level waste tank farm contaminated soils over into a separate operable unit to be evaluated under a new remedial investigation/feasibility study. This shift occurred primarily because the Environmental Defense Institute using DOE's own sample data showed that the draft plan did not meet applicable or relevant and appropriate requirements (ARAR). DOE failed to correctly classify the waste that the plan addressed. Two of the contaminated soil sites (CPP-28 & CPP-79) have transuranic (TRU) elements that cumulatively exceed the TRU definition of 100 nano curies per gram. [1] This waste must go to an Nuclear Regulatory (NRC)/ Environmental Protection Agency (EPA) approved geologic repository specifically permitted for TRU waste. Since this contamination resulted from over 100 leaks in the high-level liquid and calcine waste pipes, and acknowledged in DOE's work plan document as high-level waste, a legitimate case can be made that it still is high-level waste and subject to Nuclear Regulatory Commission disposal regulations. [2] Also see Natural Resources Defense Council petition to Nuclear Regulatory Commission July 28, 1998 that legally challenges DOE's attempt to change high-level waste to "incidental" low-level waste. The high level waste tank farm soils are included in these comments because it is uncertain how much if any public comment will be solicited prior to a record of decision. The fact that DOE failed to correctly categorize the waste in the SFE-20 Hot Waste Tank as TRU in this plan is indicative that the agency will also try to circumvent legal requirements in the Tank Soils cleanup plans.

Additionally, DOE failed to correctly catagorize the other waste as mixed low-level (MLLW) which requires either approved treatment or disposal in a permitted Resource Conservation Recovery Act (RCRA) Subtitle C hazardous waste dump.[3] Neither of which the DOE initially planed to do until the Environmental Defense Institute exposed the lack of regulatory compliance. Now DOE plans to build a compliant RCRA Subtitle C hazardous waste dump (called the INEEL CERCLA Disposal Facility or ICDF) near the current ICPP percolation ponds. There remain major uncertainties related to the siting location and the waste acceptance criteria that will be discussed later in these comments.

The Plan notes that the CPP-37gravel pits and CPP-66 Fly-ash Pit (which both sound innocuous)will be closed under Idaho Solid Waste Rules (IDAPA 16.01.06). However, the Site Treatment Plan and the Remedial Investigation/ Feasibility Study (RI/FS) show the Gravel Pits as a mixed waste discharge site with a volume of 84,393 cubic meters of waste dumped in the two pits. The RI/FS lists seven radionuclides in pit #1 and eight radionuclides in pit #2. The RI/FS lists the Fly-ash Pit with four radionuclides and RCRA listed hazardous waste contaminates.

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[1] Transuranic waste is defined as waste containing more than 100 nanocuries (100,000 pico curies) of alpha-emitting transuranic isotopes (atomic numbers greater than natural uranium) with half-lives greater than 20 years per gram of waste. Plutonium is a transuranic isotope.

[2] Nuclear Regulatory Commission 10 Code of Federal Regulations ss 60 and 61 defines high-level waste as (1) irradiated reactor fuel, (2) liquid wastes resulting from the operation of the first cycle solvent extraction system, or equivalent, and the concentrated wastes from subsequent extraction cycles, or equivalent, in a facility for reprocessing irradiated reactor fuel, and (3) solids into which such liquid wastes have been converted (ie. calcine).

[3] Land disposal restrictions (LDR) limitations on land disposal or storage of waste set forth in Idaho Code Title 39 Chapters 44 and 58 and the Rules, Regulations, and Standards for Hazardous Waste, IDAPA ss16.01.05011; Resource Conservation Recovery Act (RCRA) 42 U.S.Code ss 6924; and 40 Code of Federal Regulations (CFR) 268.

[INEL-95/0056@3-22] Similarly, DOE wants to close the CPP-65 Sewage Lagoon under Idaho Waste Water Land Application Rules, yet the RI/FS lists the site as having contaminates in the lagoon waste water. [3-22] These waste sites must be remediated under the same RCRA requirements as the other mixed hazardous/radioactive waste sites.

The chart below cites sampling data collected by DOE and published in its 1995 ICPP Remedial Investigation / Feasibility Study (RI/FS) and this data shows specifically how the waste meets mixed low level waste (MLLW) and TRU criteria. DOE's own Site Treatment Plan Congressionally mandated by the Federal Facility Compliance Act further shows specifically the MLLW classification for these contaminated sites.

The "Other Surface Soils (Group 3)" preferred alternative 4-A is to excavate contaminated surface soils to a depth of ten feet. A review of the RI/FS Appendix C borehole sample data for Strontium-90 and Cesium-137 shows that DOE's arbitrary ten foot depth would leave most of the contamination in place because it goes down generally to thirty feet. Unfortunately, there is not sample data for all of the sites in this group (and there should be), but at least four sites need to go to around 15 feet and four sites need to go to about 30 feet in order to recover the bulk of the contamination. Stopping at ten feet is not acceptable and is not supported by the data. To cite an example, CPP-36 has 50,000 pCi/g of Sr-90 and 200,000 pCi/g of Cs-137 at fifteen feet of depth. [INEL-95/0056] A fixed health base cleanup standard is needed and then require DOE keep digging until the samples show that the contaminates do not exceed the standard.

After years of pressure from the Environmental Defense Institute and other public interest groups, the state and EPA regulators finally forced DOE to construct an onsite RCRA/NRC compliant Subtitle C hazardous/radioactive mixed low-level waste (MLLW) dump at INEEL. In previous "cleanup' actions DOE was just consolidating its MLLW into old waste percolation ponds and covering it over. The unlined Warm Waste Percolation Pond at the INEEL Test Reactor Area, Test Area North, and Argonne-West are examples of this illegal dumping practice. The RCRA Subtitle C dumps have double liners, leachate detection/collection systems, and impermeable caps. The reason these RCRA laws are on the books is because previous disposal practices resulted in migration of the waste into underlying groundwater. Water sample data at the ICPP already shows massive migration of pollution into the groundwater. Despite this encouraging commitment to meet regulatory requirements and construct a RCRA Subtitle C dump (called the INEEL CERCLA Disposal Facility [ICDF]), the choice to locate it at the ICPP is misguided.

The reason why locating the ICDF at the ICPP - especially underground - is because the northern part of the ICPP lies in the 100 flood plain of the Big Lost River. DOE's plan is to locate the ICDF near the ICPP percolation ponds which are immediately south of the perimeter fence. The ICPP as a whole is about as flat as a table top. The US Geological Survey (USGS) released a study this year (1998) acknowledging that the northern half of the ICPP would be flooded in a peak 100-year flood.[4] USGS estimated that the ICPP would be under several feet of moving water and the Big Lost flow rate at 7,260 cubic feet per second. The detailed report map shows the northern half of the ICPP would be under as much as four feet of water. "This peak flow was routed down stream [of the Big Lost River] as if the INEEL diversion dam did not exist. On the basis of a structural analysis of the INEEL diversion dam (U.S. Army Corps of Engineers)

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[4] Preliminary Water-Surface Elevations and Boundary of the 100 Year Peak Flow in the Big Lost River at the Idaho National Engineering and Environmental Laboratory, Idaho, US Geological Survey, Water-resources Investigations report 98-4065, DOE/ID-22148

the dam was assumed incapable of retaining high flows. The Corps indicated that the diversion dam could fail if flows were to exceed 6,000 cubic feet per second."[5] Since the radioactive waste will be extremely hazardous for tens of thousands of years, a conservative risk assessment would consider a 500-year flood rates at 9,680 cubic feet per second (34% greater flow rate than 100 year).[6] This 500-year flood would inundate the ICPP and surrounding area. Cascading events should also be considered. A 500-Year flood plus failure of Mackay Dam (built in 1917) resulting in estimated flows of 9,700 + 54,000 cubic feet per second respectively. Failure of Mackey Dam is non-speculative in view of the recent failure of the Teton Dam of similar construction. USGS did not consider cascading events but noted previous studies showing that failure of Mackay Dam alone would result in 6 feet of water at the INEEL Radioactive Waste Management Complex.[7] Building dams around the ICDF as was done at the RWMC is not an acceptable answer because lateral water migration will go under the dams and local precipitation will be held in exacerbating the leachate conditions. Dams by definition are only functional if there is regular maintenance which cannot be assumed once DOE ends institutional control of INEEL. Dumping the waste on top of the ground and mounding the cover over it will result in the cap eroding over the long-term which again is unacceptable. DOE must designate another location for the ICDF that is not near a flood plain and preferably not over the aquifer. DOE's own study has identified at least two such sites where the Lemi Range meets the Snake River Plain. [8]

Nuclear Regulatory Commission restrictions prohibiting citing radioactive waste disposal dumps on 100 year flood plains must be observed. [NRC 10 CFR ss 61.50] The reason for these restrictions is because the flood water will leach the contaminates out of the waste and flush the pollution more rapidly into the aquifer. Since these wastes will remain toxic for tens of thousands of years, they must be disposed of responsibly in a safe permanent repository. These issues must be kept in mind also with respect to the ICPP high-level waste tanks that are some forty feet underground as well as the underground spent reactor fuel storage and calcine storage bins. Water acts as a moderator and if the underground spent fuel vaults are flooded, it could cause a criticality. All of these underground high-level waste sites are extremely vulnerable. Former ICPP workers recall stacking sandbags six feet high around the plant during a Spring flood about ten years ago.

The ICDF Engineering Design and Waste Acceptance Criteria (WAC) must be developed with public involvement through a free and open discussion. Only un-containerized wastes that can be compacted during placement should be allowed so as to minimize subsidence caused by container decomposition. Biodegradable, VOC, collapsible, soluble, TRU, or Greater than Class C Low-level, and Alpha-low-level waste must also be excluded from the ICDF dump and sent off-site. Prior to completing the ICDF Title II Design, workshops should be convened for stakeholders to comment on the proposal. Waste Acceptance Criteria maximum contaminate concentration levels must be determined from waste sampling prior to being mixed with any stabilizing materials. In other words, "dilution is not the solution to pollution".

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[5] DOE/ID-22148, page 8

[6] Estimated 100 Year Peak Flows and Flow Volumes in the Big Lost River and Birch Creek at the Idaho National Engineering Laboratory, U.S. Geological Survey, Water Resources Investigations Report 96-4163, page 11 shows flow rates for 5-year, 10-year, 100-year, and 500-year floods

[7] DOE/ID-22148, page 6

[8] Moriarty, T. P., Feasibility of Locating Dry Storage of Spent Nuclear Fuel on Idaho National Engineering Laboratory Land at a Site That Does Not Overlie the Snake River Aquifer, November 1995

The following table lists a sampling of the contaminated sites at the ICPP. The table shows the contaminate, the concentration of the contaminates based on DOE's own sampling data, and a reference for where the information was obtained (see end of chart). The Tank Farm Soils are included because of the uncertainty of public comment availability if this waste is included in the High-Level Waste Environmental Impact Statement.

ICPP Site	Contaminate	Concentration	Reference
Tank Farm Soils	**Group 1**		
CPP-15 Solvent Burner Tank Leaks CPP-605 3 R/hr	 Cs-137 Pu-238 Pu-239/240 Tc-99	pCi/g 586,000 4,570 825 36	No Hazardous Materials sampling Inadequate info (B) @ 37 (C) 11-4
CPP-20 CPP-604 Unloading Area	STP Listed MLLW Cs-137	pC/g 88	No Hazardous Materials sampling Inadequate info (A) 2-120 (D) 2-4 Vol. VII
CPP-25 Leak between WC-119 WL-102	STP Listed MLLW		No Hazardous Materials sampling Inadequate info (A) 2-120
CPP-26 Steam Flush Explosion HL Tank Lines 13 acres contaminated 50,000 c/m beta/gamma	 Sr-90 Cs-137	pCi/g 15,800 6,730	No Hazardous Materials sampling Inadequate info (A) 2-120 (C) 10-6 Vol IV
CPP-27 **CPP-33** WL-102 Tank Line Leak 30 R/hr 300 gallons 1,000 curies 50,000 cpm	 Cs-137 Sr-90	pCi/g 1,370 506	No Hazardous Materials sampling Inadequate info (A) 2-125 (B) 35 +38 (D) 2-4 Vol VII
CPP-28 South WM-181 3,629 gallons HLLW Leaked containing 46,400 Ci combined with CPP-79 400 R/hr	 Tritium Co-60 Sr-90 Cs-134 Cs-137 Pu-238* Pu-239 Pu-240 Pu-241 Am-241 Pu-242* U-234* Total TRU	pCi/g 25,000 23,000 57,000,000 76,000 100,000,000 276,000 13,000 12,000 1,100,000 1,500,000 32 21 2,901,053	Exceeds TRU Waste = 100,000 pCi/g or 100 nCi/g Requires deep geologic burial (A) 2-121 (C) 10-8 (C) F5-25 Vol V (C) H-9 Vol VI

CPP-31 South of WM-183 14,000 gallon HLLW leak Containing 40,988 Ci Released 10 R/hr	 Cs-137 Co-60 Sr-90 Cs-137 Eu-154 U-235 Pu-239 Pu-240 Mercuric nitrate Nitric acid	pCi/g 899,000 336 710,000 2,190,000 2,750 9,000 1,100 1,100	No Hazardous Materials sampling Inadequate info (A) 2-121 (C) 10-13 Vol IV (C) H-14 Vol VI (B) 37 (D) 2-4 Vol VII (C) F5-29 Vol V
CPP-32 HLLW above ground pipe leak Valve Box B-4 2 r/hr	 Cs-137 Sr-90	pCi/g 277 278	No Hazardous Materials sampling Inadequate info (A) 2-125 (B) 37 (C) 10-15 Vol IV
CPP-58 PEW 20,000 Gallon Leak	 Cs-137 Sr-90	pCi/g 63.6 95.6	(A) 2-133 (C) 11-10
CPP-79 HLLW from WCF 2,500 gallons Near Valve Box A-2 400 R/hr 46,400 Curies when combined with CPP-28	 Gross alpha Sr-90 Cs-137 Eu-154 Am-241 Pu-238 Pu-239 Pu-241 U-234 Total TRU	pCi/g 809,000 56,800,000 102,000,000 565,000 16,600 276,000 1,050,000 89,900 55 382,555	Exceeds TRU Waste = 100,000 pCi/g or 100 nCi/g Requires deep geologic burial (A) 2-123 (C) 10-17 Vol IV (D) 2-4 Part B Vol VII (C) H-9 Vol VI
Other Surface	**Soil Sites**	**Group 3**	
CPP-91	 Am-241 Cs-137 Eu-154 Sr-90	pCi/g 763 1,100,000 5,040 56,700	No Hazardous Materials sampling Inadequate info (A) 2-137 (D) 2-4 Vol VII
CPP-13 Calcine HLW from CPP-633 Contaminated 300 sq. ft.	 Zirconium Cs-137 Sr-90	pCi/g 14.3 4,630 4,180	No Hazardous Materials sampling Inadequate info (A) 2-124 (B) 37 (C) 19-4
CPP-36 Transfer Leak 750 gallons containing 8.44 curies and 20 r/hr	STP Listed MLLW Sr-90 Cs-137 Pu-239 Am-241 Pu-238	pCi/g 139,750 5,174,400 320 760 8,200	 (A) 2-126 (C) 12-7 RCRA waste

CPP-35 WCF Calcine Vessel Decon Leak CPP-633 10 gallons 10 Curies	STP Listed MLLW Sr-90 Cs-137 Eu-154 Pu-238 Hg	pCi/g or mg/kg 3,240 8,640 20 17 5.5	Mercury likely exceeds LDR's TCLP .025 mg/l RCRA waste (A) 2-125 (C) 12-4
CPP-93 Calcine Trench	 Aluminum Mercury	mg/kg 120,000 140	Mercury likely exceeds LDR's TCLP .025 mg/l (A) 2-137 (C) 26-4
CPP-92 1500 2x4x8 boxes	STP Listed MLLW Mercury Cs-137 Sr-90 Pu-238 Pu-239/240	mg/kg 10.4 7,730 10,800 259 24.7	RCRA Waste Mercury likely exceeds LDR's TCLP .025 mg/l (A) 2-137 (C) 25-2
CPP-34 Rad Soil Dump >30 mr/hr 110.23 Ci Released	 Sr-90 Cs-137 Lead U-234/238 Np-237 Pu-238 Mercury Silver Bis- (2 ethlhexyl) Phthalate	pCi/g or mg/kg 6,000 2,000 132 5.3 0.7 5.1	Likely exceeds TCLP Mercury 0.75 mg/l RCRA Waste (A) 2-119 (B) 36 (C) 18-3
CPP-14 Sewage Plant Two Imhoff Tanks	 Arochlors (PCB) Cs-137 U-234 U-238	mg/kg or pCi/g 23 6.21 6.89 52.1	Exceeds LDR for PCB @ 10 mg/kg RCRA Waste (A) 2-118 (C) 17-5
CPP-44 Grease Pit	 Chromium Lead Mercury	mg/kg 1,540 163 5	Likely exceeds LDR's TCLP Chrom.0.6mg/l Lead 0.75 mg/l Mercury 0.025 mg/l RCRA Waste (A) 2-131
CPP-55 Mercury Contaminate CPP-T-15	 Chromium (total) Mercury	mg/kg 130 5.2	Likely exceeds LDR's TCLP Chromium 0.6mg/l Mercury 0.025 mg/l RCRA Waste (A) 2-115
CPP-67 Percolation ponds	 Cs-137 Pu-238 Pu-239-240 Sr-90	pCi/g 93.6 13 2.07 16.3	Inadequate hazardous waste sampling (A) 2-117 (C) 16-5 (D) 2-4 Vol VII

Soils Under	Buildings	Group 2	
CPP-02 CPP-603 French Drain 493 Curies Released	4,777,688 gallons		No Hazardous Materials sampling Inadequate info (A) 2-127 (C) F5-21 Vol V
CPP-87 CPP-604 Vapor Off-gas blower PEW Pump Cell	 Co-60 Cs-134 Cs-137	pCi/L 70,740 4,018 330,4180	No Hazardous Materials sampling Inadequate info (A) 2-136
CPP-89 Tunnel between CPP-604 & 605	 Mercury Cs-137 Pu-238 Pu-239/240 Sr-90	pCi/g or mg/kg 10.4 7,730 259 24.7 10,800	Lead likely exceeds LDR's TCLP Mercury 0.025 mg/l RCRA Waste (A) 2-136 (C) 5-73
CPP-80 CPP-601 Vent Tunnel Drain 550 Curies Released	 Cs-137 Sr-90	pCi/g 86,300 85,600 metal contaminates	No Sampling Inadequate info (A) 2-133 (C) 9-11
CPP-01 CPP-603 Settling Basin and dry wells # SW-048 & CPP-303	 Cs-137 Sr-90 Co-60 Eu-154/155	pCi/g 46,000 4,850 322 35,000	No Hazardous Materials sampling Inadequate info (C) 13-6 (A) 2-127
CPP-03 Open Storage Area	 Cs-137 Eu-152 Sr-90	pCi/g 65.1 2.13 43.9	No Hazardous Materials sampling Inadequate info (A) 2-127
CPP-04 **CPP-05** CPP-603 soil around settling tank	 Cs-134 Cs-137 Ce-144 Co-60 Eu-152 Eu-154 Eu-155	pCi/g 1,450 26,500 2,390 2,390 35,000 35,000 7,600	No Hazardous Materials sampling Inadequate info (A) 2-127 (D) 2-4 Volume VII
CPP-08 **CPP-09** Open near CPP-603	Cs-137	1,080 pCi/g	No Hazardous Materials sampling Inadequate info (A) 2-128 (D) 2-4 Vol VII

CPP-10 800 gallon leak beside CPP-603 20,000 cpm	Cs-137	1,190 pCi/g	No Hazardous Materials sampling Inadequate info (A) 2-127 (C) 11-13 (D) 2-4 Volume VII
CPP-11 SFE-106 Tank 500 gallon leak	Cs-137	pCi/g 72.7	No haz mat. sampling (C) 13-14 (D) 2-4 Vol VII
CPP-19 CPP-603 to CPP-604 3,500 Gallon Line Leak	 Cs-137 Co-60 Eu-152 Eu-154 Eu-155 Pu-239 Sr-90	pCi/g 408,000 21,600 87,600 53,500 9,620 141 125,000	Inadequate Hazardous Materials sampling Inadequate info (A) 2-129 (C) 21-4 (D) 2-5 Volume VII

The ICPP Remedial Investigation/Feasibility Study lists 100 chemical/radiological release sites. Of the 100 release sites, 13 are related to the tank farm. The estimate of radioactivity in decayed values in the surface soils within the ICPP compound listed above is 89,569 curies plus 22,200 curies released to the aquifer.

DOE's Plan discounts the Perched Water as "No risk because perched water is not capable of sustaining a pumping rate needed for future domestic water supplies; therefore it is not a source of potable water." Yet in ICPP Plan Alternative 3 (not the preferred alternative), DOE acknowledges a perched water pump/treat rate of 46 million gallons over 25 years. Applying simple arithmetic that works out to a daily pumping rate of 5,041 gallons per day which is likely adequate to sustain over ten households. Therefore, DOE must include a future residential exposure scenario that would disqualify the preferred alterative 2 which is basically doing nothing except reduce the recharge rate to the perched water. The table below shows a select list of contaminates found in perched water. Comparing the concentration level of the sample to the regulatory limit or maximum concentration level (MCL) for drinking water, one can see the severity of the pollution problem. DOE and the state and EPA regulators once again have withheld this essential information from the public by not stating it in the proposed plan. In order to make informed decisions on these cleanup plans, the public requires adequate and accurate information which currently is absent.

Perched Water at ICPP

Contaminate	**Concentration (mg/l) (pCi/l)**	**EPA Std. (MCL)**	**Reference page number**
Gross Alpha	7,290	15	(A) 2-155
Gross Beta	925,000	8	(A) 2-160
Tritium	75,500	20,000	(A) 2-162
Strontium-90	516,000	8	(A) 2-160

Iodine-129	3.82	1	(C) 4-47
Cadmium	0.012	0.005	(A) 2-155
Chromium	1.6	0.1	(A) 2-184
Lead	0.0651	0.05	(A) 2-155
Manganese	0.397	0.05	(A) 2-155
Thallium	0.0052	0.002	(A) 2-161
Iron	15	0.3	(A) 2-180

(A) INEL-95/0056 (C) DOE/ID-10534 Volume IV

The perched water preferred alternative 2 alone does not meet regulatory requirements, however when combined with alternative 3 (pump and treat) it will partially meet the requirements with the following exception. In order to reduce the recharge to the perched water, the existing ICPP percolation ponds will be taken out of service and replaced with new "like for like" percolation ponds not over the existing perched water. This is a good an example of rubber stamp regulators. The contamination of the groundwater currently is largely the result of using unlined percolation ponds to dispose of process waste. The very fact that the current percolation ponds are still in use today is a clear and undeniable statement of DOE's lack of conscience. It is an outrage for DOE to continue this polluting of Idaho's most valuable resource.

The Plan's "human health baseline risk assessment summary" uses maximum contaminate levels to determine risk level for each of the contaminate groups. Again, DOE is not using "maximum" contaminate data. For instance, the Snake River Aquifer risk assessment strontium-90 level used by DOE is 8.1 yet DOE's own sampling data in the Remedial Investigation Feasibility Study (RI/FS) shows 14 aquifer monitoring wells that exceed the MCL including USGS-047 with strontium-90 levels over 60 pCi/L. [INEL-95/0056 @ D-19] DOE additionally fails to acknowledge aquifer tritium contamination in excess of the MCL's. DOE's use of arbitrarily low or averaged sample data results in unreliable and non-conservative risk assessments. This cooking of the numbers is not an anomaly but unfortunately the rule as opposed to the exception. See EDI comments on previous cleanup plans. Snake River Plain Aquifer (Group 5) should be remediated with a pump and treat (alternative 3) for the same reasons the perched water should be removed and treated.

None of the SFE-20 Hot Waste Tank System (Group 7)(CPP-69) cleanup alternatives offered in the ICPP plan meet regulatory requirements. Once again, DOE fails to correctly classify the waste in SFE-20 tank in a blatant attempt to circumvent regulatory requirements. The Remedial Investigation/ Feasibility Study sample data of the tank (see table below) shows clearly that the tank contents (liquid and sludge) as well as the tank concrete vault contents meet the definition of mixed transuranic (TRU) waste, and by regulatory definition, it must go to a deep geologic repository. Grouting (mixing with cement) as proposed by DOE, is a throughly discredited disposal method - tried and failed at Hanford. The bottom line is DOE cannot legally dump transuranic waste at INEEL. In fact, the only transuranic waste repository in the United States under consideration is the Waste Isolation Pilot Project in New Mexico. However, the State of New Mexico is uncertain that WIPP can meet RCRA permit criteria.

SFE-20 Hot Waste Tank System Group 7 (CPP-69)

Contaminate	Concentration	Notes/Reference
Tank Liquid (400 gallons)	pCi/L	CPP-512 CPP-603 Waste Tank Fuel Cutting Facility (C) page 9-9 Vol IV (D) page I-5 Vol VII TRU waste
Cs-134	7,800	
Cs-137	2,100,000	
Sr-90	9,700,000	
Plutonium total	18,000,000	
Co-60	74,000	
Sb-125	73,000	
Tank Sediments (55 gallons)	pCi/g	Exceeds TRU Waste = 100,000 pCi/g or 100 nCi/g Plutonium + Uranium
Co-60	330,000	
Cs-137	55,400,000	
Cs-134	160,000	
Eu-152	140,000	
Eu-154	120,000	
Sr-90	4,700,000,000	
Plutonium total	94,000	
Uranium total	84,000	
Tank Vault Liquid	pCi/L	Likely TRU Waste *
Cs-137	250,000,000	
Co-60	110,000	
Sr-90	170,000,000	
Plutonium total	100,000	
Tank Vault Sediments	pCi/g	Likely TRU Waste
Co-60	22,000	
Cs-137	8,920,000	
Cs-134	11,000	
Eu-152	150,000	
Eu-154	130,000	
Eu-155	47,000	
Sr-90	1,720,000	
Plutonium total	79,200	
Tank Pump Pit Sediment	pCi/g	
Co-60	24,000	
Cs-137	2,390,000	
Cs-134	13,000	
Eu-152	57,000	
Eu-154	46,000	
Eu-155	21,000	
Sb-125	47,000	
Sr-90	5,900,000	
Plutonium total	3,010	

Tank Pump Pit Liquid Cs-137	pCi/L 76,000	
Site Treatment Plan lists as Mixed Cadmium Mercury	mg/kg 260	Likely Exceeds LDR TCLP Cadmium 0.11 mg/l Mercury 0.025 mg/l A.4-136

* The assumption is that if a ml of water weights a gram, the sediments containing heavy metals will weigh considerably more than plain water and therefore the sediment will meet the transuranic definition of 100,000 pCi/g

References
(A) Waste Area Group 3 Comprehensive Remedial Investigation / Feasibility Study Work Plan (Final) Volume I, August 1995, INEL-95/0056, Lockheed Idaho Technologies Company

(B) Department of Energy Idaho Operations Office, Session 1 Presentation Scope of Comprehensive RI/FR and ICPP Background, Talley Jenkins, Session 2 Scott Reno DEQ, Session 3 Howard Orlean EPA, January 17, 1996

(C) Comprehensive Remedial Investigation/ Feasibility Study for the Idaho Chemical Processing Plant Operational Unit 3-13 at Idaho National Engineering Laboratory Part A RI/BRA Report (Final) US Department of Energy Idaho Operations Office, November 1997, DOE/ID-10534 Volume IV, V, and VI

(D) Comprehensive RI/FS for the Idaho Chemical Processing Plant OU-3-13 at INEEL - Part B, FS Report Final Volume VII, DOE/ID-10572, November 1997

STP: Idaho National Engineering Laboratory Proposed Site Treatment Plan, March 1995, DOE/ID-10493, US Department of Energy Idaho Operations Office

Federal Register, Tuesday May 26, 1998, Part-II, Environmental Protection Agency, 40 CFR Parts 148, 261, 266, 268, and 271, Land Disposal Restrictions Phase IV, Final Rule

Acronyms:
LDR: Land Disposal Restrictions (RCRA)
RCRA: Resource Conservation Compliance Act
UTS: Universal Treatment Standards under RCRA
TCLP: Toxic Contaminate Leach Procedure
MLW: Mixed Low-Level Waste